



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/529,517

10/11/2005

Wataru Ikeda

92478-1700

6119

52044 7590 05/11/2010
SNELL & WILMER L.L.P. (Panasonic)
600 ANTON BOULEVARD
SUITE 1400
COSTA MESA, CA 92626

EXAMINER

HEYI, HENOK G

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

05/11/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 03/17/2010 have been fully considered but they are not persuasive. Applicant argues that Oshima does not teach "an interleave unit which is recorded in front of a segment, includes a program to be synchronized with playback of the segment". And also points out branching of the VOBs sequentially and not synchronously played as the same time. Applicant also argues that Yamane merely discloses that each stream is in synchronization with the corresponding encoding signal. However, Oshima clearly teaches plurality of interleave blocks (see Abstract) and also synchronization of picture, audio and sub picture signals (see col 23 lines 59-64). Yamane also teaches interleaved blocks to enable seamless reproduction of the scenes in each unique scenario (see col 28 lines 40-44).

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 35 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 35 is drawn to a computer readable medium having stored thereon a computer program, where the computer readable medium can be transitory, i.e., is not explicitly limited as disclosed as only being non-transitory computer readable media; therefore, fail(s) to fall within a statutory category of invention. Applicant

Art Unit: 2627

should note that adding "non-transitory" to the claim to limit a claimed computer readable medium to being statutory would be acceptable.

A claim directed to a computer readable medium having stored thereon a computer program is non-statutory, where the computer readable medium can be a signal, a carrier wave, or a data structure, which are non-statutory as noted, *infra*.

A claim directed to a computer program itself, a signal, a carrier wave, or a data structure is non-statutory because it is not:

A process occurring as a result of executing the program, or

A machine programmed to operate in accordance with the program, or

A manufacture structurally and functionally interconnected with the program in a manner which enable the program to act as a computer component and realize its functionality, or

A composition of matter.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-10, 12, 15, 16, 20, 23-25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Oshima et al. US 6,925,250 B1 (Oshima hereinafter).

Regarding claim 1, Oshima teaches an optical disc (see Fig. 25) having recorded therein a digital stream divided into n segments (The stream of the main signal and the

Art Unit: 2627

stream of the sub signal are divided into 1 GOP or more of frames, see Abstract), wherein an interleave unit is recorded in front of an i th segment to be played back in an i th place (First interleave blocks 54 each including 1 GOP or more of the stream of the main signal and second interleave blocks 55 each including 1 GOP or more of the stream of the sub signal are recorded on an optical disk 1, see Abstract), where each of i and n is an integer that satisfies i and the interleave unit includes a program to be synchronized with playback of the i th segment (picture, audio and sub picture signals are synchronized, col 23 lines 59-64).

Regarding claim 2, Oshima teaches the optical disc of Claim 1, wherein the interleave unit includes ending time information (VOB reproduction end time (VOB_E_PTM) in the DSI packet, col 24 lines 21-26) that indicates at which point on a playback time axis of the digital stream the program should be deleted from a memory (the data after the switching point $ts1$ of a GOP 781c is not required and thus is deleted as shown in part (2) of FIG. 12, col 28 lines 36-38).

Regarding claim 3, Oshima teaches the optical disc of Claim 1, wherein the interleave unit includes start time information that indicates at which point on a playback time axis of the digital stream the program becomes usable (VOB reproduction start time (VOB_S_PTM) in the DSI packet, col 24 lines 21-26).

Regarding claim 4, Oshima teaches the optical disc of Claim 1, wherein a copy of the interleave unit is recorded between the i th segment and an $i+1$ th segment (First interleave blocks 54 each including 1 GOP or more of the stream of the main signal and

Art Unit: 2627

second interleave blocks 55 each including 1 GOP or more of the stream of the sub signal are recorded on an optical disk, see Abstract).

Regarding claim 5, Oshima teaches the optical disc of Claim 4, wherein a boundary between the i th segment and the $i+1$ th segment falls in a middle of a live range of the program (see Fig. 7).

Regarding claim 6, Oshima teaches the optical disc of Claim 4, wherein a boundary between the i th segment and the $i+1$ th segment falls after a live range of the program (see Fig. 12).

Regarding claim 7, Oshima teaches the optical disc of Claim 1, wherein the i th segment is made of a plurality of access units, each access unit containing video data having an intra picture (The differential information 716 is encoded by a second MPEG encoder 717 for 720P into a GOP-based video signal including an intraframe (i picture) and a differential frame, col 10 lines 30-32), and the optical disc has recorded therein map information that shows the interleave unit in association with one of an address and a playback time of each of the access units belonging to the i th segment (the original address tsG to $tf2$ ($tL2$) of the second stream is replaced with the new time stamp, col 33 lines 25-35).

Regarding claim 8, Oshima teaches the optical disc of Claim 1, wherein $i \geq 2$, and a boundary between the i th segment and an $i-1$ th segment corresponds to a start point of a live range of the program on a playback time axis of the digital stream (see Fig. 7).

Regarding claim 9, Oshima teaches the optical disc of Claim 8, wherein the live range is a section on the playback time axis, during which the program becomes usable (see Fig. 7).

Regarding claim 10, Oshima teaches the optical disc of Claim 1, wherein the program is an event handler that is driven by an event, and an interleave unit including the event handler is recorded in front of a time at which the event occurs on a playback time axis of the digital stream (see Fig. 29).

Regarding claim 12, Oshima teaches the optical disc of Claim 1, further having recorded therein interleave- unit general information that shows identifiers of a plurality of interleave units recorded in the optical disc, in association with a size and a live range of a corresponding program (a hierarchical recording identifier 725 indicating the start point and the termination point and specified interleave block reproduction prohibition information 726 for prohibiting the second interleave blocks 718a and 718b including the differential information from being reproduced by the conventional reproduction apparatus, col 10 lines 45-51).

Regarding claim 15, Oshima teaches a playback apparatus (see Fig. 1) for an optical disc having recorded therein a digital stream, the playback apparatus comprising: a reading unit operable to read, from the optical disc, an i th segment to be played back in an i th place from among n segments constituting the digital stream (The stream of the main signal and the stream of the sub signal are divided into 1 GOP or more of frames, see Abstract), together with an interleave unit preceding the i th segment, where each of i and n is an integer that satisfies $i < n$; a playback unit operable

Art Unit: 2627

to play back the read ith segment place (First interleave blocks 54 each including 1 GOP or more of the stream of the main signal and second interleave blocks 55 each including 1 GOP or more of the stream of the sub signal are recorded on an optical disk 1, see Abstract); and a processing unit operable to perform synchronous processing using a program included in the read interleave unit, in synchronization with playback of the ith segment (picture, audio and sub picture signals are synchronized, col 23 lines 59-64).

Regarding claim 16, Oshima teaches the playback apparatus of Claim 15, comprising: a memory operable to store the read interleave unit; and a track buffer operable to store the read ith segment, wherein the playback unit receives supply of the ith segment via the track buffer, and the processing unit receives supply of the interleave unit via the memory (The optical disk reproduction apparatus may further include a buffer memory section for storing the plurality of first interleave units and the plurality of second interleave units, col 3 lines 24-28).

Regarding claim 20, Oshima teaches the playback apparatus of Claim 16, but Oshima fails to teach the interleave unit contains ending time information, and the processing unit deletes the interleave unit from the memory when a current playback time point of the playback unit has reached an ending time that the ending time information indicates (a second video stream including a plurality of second GOPs so that at least one picture unnecessary for reproduction is deleted in accordance with the reproduction control information, col 6 lines 36-41).

Art Unit: 2627

Regarding claim 23, Oshima teaches the playback apparatus of Claim 15, wherein a boundary between the i th segment and an $i+1$ th segment falls in a middle of a live range of the program, a copy of the interleave unit is recorded between the i th segment and the $i+1$ th segment, and the read unit reads the copy from the optical disc when a random access is performed to the i th segment (see Fig. 7).

Regarding claim 24, Oshima teaches the playback apparatus of Claim 15, wherein a boundary between the i th segment and an $i+1$ th segment falls after a live range of the program, a copy of the interleave unit is recorded between the i th segment and the $i+1$ th segment, the read unit reads the i th segment when the playback unit performs normal playback, and the playback unit, when performing reverse playback, reads the $i+1$ th segment among the n segments, together with the copy of the interleave unit preceding the $i+1$ th segment (see Fig. 12).

Regarding claim 25, Oshima teaches the playback apparatus of Claim 15, wherein the i th segment is made of a plurality of access units, each access unit containing video data having an intra picture, the optical disc has recorded therein map information that shows the interleave unit in association with one of an address and a playback time of each of the access units belonging to the i th segment, and the read unit performs reading of the interleave unit, by referring to the map information (The differential information 716 is encoded by a second MPEG encoder 717 for 720P into a GOP-based video signal including an intraframe (i picture) and a differential frame, col 10 lines 30-32), and the optical disc has recorded therein map information that shows the interleave unit in association with one of an address and a playback time of each of

Art Unit: 2627

the access units belonging to the ith segment (the original address tsG to tf2 (tL2) of the second stream is replaced with the new time stamp, col 33 lines 25-35).

Regarding claim 28, Oshima teaches the playback apparatus of Claim 27, wherein the optical disc has recorded therein mark information that defines a predetermined time point and a predetermined time interval on the playback time axis and the playback unit generates the event according to the mark information (see Fig. 7).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11, 13, 14, 17-19, 21-22, 26, 27, 29-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. US 6,925,250 B1 (Oshima hereinafter) in view of Yamane et al. US 6,393,196 B1 (Yamane hereinafter).

Regarding claim 11, Oshima teaches the optical disc of Claim 10, but Oshima fails to teach the event is one of (a) an event indicating that a current playback time point has reached a predetermined time on a playback time axis, (b) an event indicating that a user operation is made during a predetermined time duration of the playback time axis, (c) an event occurring prior to playback according to a playback path, (d) an event occurring after playback according to a playback path, (e) an event generated by the

Art Unit: 2627

playback apparatus, and (f) an event generated by another program. However, Yamane teaches program chain information VTS_PGCI in a DVD data structure for multi-scene control as shown in FIG. 9 is described next below with reference to FIG. 16 and FIG. 17. (230). The user-selected scenarios shown in FIG. 9 are shown in FIG. 16 using the notation of a VTSl data structure representing the internal structure of a video title set in the DVD data structure shown in FIG. 5, (see Col 27 lines 59-65). Yamane also teaches a reproduction path, which is a reproduction sequence of an MPEG stream, is then determined to enable reproduction of content according to a user-selected scenario, (see col 1 lines 40-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc and apparatus of Oshima to have the ability to control events bases on different inputs from user or a predetermined time setting. The modification would have been obvious because of the benefit of event handling techniques in better use of the optical apparatus.

Regarding claim 13, Oshima teaches the optical disc of Claim 1, but Oshima fails to teach further having recorded therein playlist information and a dynamic scenario, wherein the playlist information defines a playback path by disposing pieces of information indicating playback sections of video data according to a playback order, the dynamic scenario defines a video title by showing a playback procedure of at least one playback path, and the interleave unit contains an identifier that shows, as a live range of the program or the data, one of a playback path, a playback section, an entire video title, and a chapter of the video title. However, Yamane teaches the optical disc of Claim 1, further having recorded therein playlist information and a dynamic scenario (A

Art Unit: 2627

reproduction path, which is a reproduction sequence of an MPEG stream, is then determined to enable reproduction of content according to a user-selected scenario, col 1 lines 40-43), wherein the playlist information defines a playback path by disposing pieces of information indicating playback sections of video data according to a playback order (scenario 1 consists of cell playback information C_PBI#1 corresponding to scene 1, col 28 lines 3-4), the dynamic scenario defines a video title by showing a playback procedure of at least one playback path (the number of titles TITLE_NO defining the number of scenario reproduction paths as the number of titles in the scenario data St7 is set, col 40 lines 28-30), and the interleave unit contains an identifier that shows, as a live range of the program, one of a playback path, a playback section, an entire video title, and a chapter of the video title (the scenes unique to scenario 1 and scenario 2, are also placed in an interleaved block to enable seamless reproduction of the scenes in each unique scenario, and to enable seamless reproduction to the common scenes before and after, col 28 lines 40-44).

Regarding claim 14, Oshima teaches the optical disc of Claim 1, but Oshima fails to teach the interleave unit contains a locator that contains drive information and path information, the drive information indicating a drive to which the program is to be read, and the path information indicating in which layer of a layer structure of the drive the program or the data exists. However, Yamane teaches a contiguous block regions and interleaved block regions are then written to disk in the track path Dr direction in the playback sequence, (see col 30 lines 58-60).

Art Unit: 2627

Regarding claim 17, Oshima teaches the playback apparatus of Claim 16, but Oshima fails to teach further comprising a switcher, wherein the read unit, upon reading a sector of the optical disc, makes a notification of an address of the sector, the switcher (a) writes information read from the sector to the memory when judging that the notified address from the read unit falls within an area for storing interleave units, and (b) sequentially writes information read from the sector to the track buffer when judging that the notified address from the read unit falls within an area for storing segments, each interleave unit on the memory is made of information that the switcher has written to the memory, and each segment on the track buffer is made of information that the switcher has written to the track buffer. However, Yamane teaches that when a video object unit VOB is in an interleaved block, an Interleaved Unit End Address (ILVU_EA) identifying the address of the last pack in the ILVU to which the VOB belongs is written. This address is expressed as the number of sectors from the navigation pack NV of that VOB. In addition when a video object unit VOB is in an interleaved block, the starting address of the next interleaved unit ILVU (NT_ILVU_SA) is also declared. This address is expressed as the number of sectors from the navigation pack NV of that VOB, (see col 24 lines 18-27).

Regarding claim 18, Oshima teaches the playback apparatus of Claim 17, but Oshima fails to teach in the optical disc, each interleave unit is stored in a file separately from the digital stream, the optical disc has recorded therein file management information that indicates each file identifier in association with an address in the optical disc of one of the digital stream and an interleave unit, and judgment as to whether a

Art Unit: 2627

current read position is within the area for storing interleave units or within the area for storing segments is performed by referring to the file management information. However, Yamane teaches a single memory buffer can be made functionally equivalent to these separate buffers by using on a time-share basis a memory buffer that operates at several times the read/write rate required by these separate buffers, (see col 15 lines 1-3)

Regarding claim 19, Oshima teaches the playback apparatus of Claim 16, but Oshima fails to teach in the optical disc, each interleave unit is stored in a file separately from the digital stream, the optical disc has recorded therein file management information that indicates each file identifier in association with an address in the optical disc of one of the digital stream and an interleave unit, and the read unit, before performing the reading, opens each file for specifying the memory as a reading destination for a file storing an interleave unit, and specifying the track buffer as a reading destination for a file storing the digital stream. However, Yamane teaches the multimedia bitstream MBS contains the volume file structure VFS, which indicates physical addresses on the recording medium generated by the video zone formatter, (see col 9 lines4-7).

Regarding claim 21, Oshima teaches the playback apparatus of Claim 16, but Oshima fails to teach the apparatus comprising a virtual machine subunit, wherein the processing unit, upon request by an application program, supplies the program in the interleave unit on the memory to a work area of the virtual machine subunit, and has the virtual machine subunit to execute the program. However, Yamane teaches private

Art Unit: 2627

packets 1 and 2 each comprise a packet header, private data area, and data area, (see col 22 lines 65-66).

Regarding claim 22, Oshima teaches the playback apparatus of Claim 21, but Oshima fails to teach the interleave unit contains start time information, and the processing unit supplies the program to the work area of the virtual machine subunit upon request by the application program when the current playback time point of the playback unit has reached a start time that the start time information indicates, and the current playback time point of the playback unit has not reached the start time, the processing unit does not supply the program to the work area of the virtual machine subunit, even upon request by the application program. However, Yamane teaches using the synchronization control data St81, the synchronization controller 2900 determines the decoding start timing for each stream so that after decoding the streams are in a particular sequence. Based on this decoding timing, the synchronization controller 2900 generates and supplies a video stream decoding start signal St89 to the video decoder 3801. The synchronization controller 2900 similarly generates and supplies a subpicture stream decoding start signal St91 and audio stream decoding start signal St93 to the subpicture decoder 3100 and audio decoder 3200, respectively, col 13 lines 57+).

Regarding claim 26, Oshima teaches the playback apparatus of Claim 15, but Oshima fails to teach that the processing unit includes a virtual machine subunit, the playback unit plays back the digital stream and generates an event synchronized with the playback, and the virtual machine subunit, when the playback unit has generated

Art Unit: 2627

the event, executes the program in the interleave unit. However, Yamane teaches private packets 1 and 2 each comprise a packet header, private data area, and data area, col 22 lines 65-66).

Regarding claim 27, Oshima teaches the playback apparatus of Claim 26, but Oshima fails to teach the event is one of (a) an event indicating that a current playback time point has reached a predetermined time on a playback time axis of video data, (b) an event generated by the playback apparatus, and (c) an event generated by another program. However, Yamane teaches private packets 1 and 2 each comprise a packet header, private data area, and data area, col 22 lines 65-66. However, Yamane teaches program chain information VTS_PGCI in a DVD data structure for multi-scene control as shown in FIG. 9 is described next below with reference to FIG. 16 and FIG. 17. (230). The user-selected scenarios shown in FIG. 9 are shown in FIG. 16 using the notation of a VTSl data structure representing the internal structure of a video title set in the DVD data structure shown in FIG. 5, (see Col 27 lines 59-65). Yamane also teaches a reproduction path, which is a reproduction sequence of an MPEG stream, is then determined to enable reproduction of content according to a user-selected scenario, (see col 1 lines 40-43).

Regarding claim 29, Oshima teaches the playback apparatus of Claim 27, but Oshima fails to teach a playback apparatus comprising a reception unit operable to receive a user operation, wherein the event is an event that indicates that the reception unit has received a user operation in predetermined time duration of the playback time axis of the video data. However, Yamane teaches that a user can reproduce video and

Art Unit: 2627

audio in the multimedia source data on the display unit and speaker unit to recognize the title content. While confirming the reproduced content, a user can enter content editing commands according to a desired scenario using the keyboard unit, (see col 6 lines 30-39).

Regarding claim 30, Oshima teaches the playback apparatus of Claim 15, but Oshima fails to teach the optical disc has recorded therein interleave-unit general information being management information for a plurality of interleave units recorded on the optical disc, the playback apparatus includes a memory and a playback control unit that is operable to judge, according to the interleave-unit general information, whether the interleave units are storable in the memory, and the read unit reads part or all of the interleave units when the playback control unit has judged affirmatively. However, Yamane teaches a multimedia bitstream MBS, which is the largest management unit of a bitstream of multimedia data in an authoring system, is formed from a specific number of VZ, (see col 5 lines 45-48).

Regarding claim 31, Oshima teaches the playback apparatus of Claim 15, but Oshima fails to teach the optical disc has recorded therein playlist information that defines a playback path by disposing pieces of information indicating playback sections of the digital stream according to a playback order, and the playback control unit controls the read unit and the playback unit so as to play back the digital stream according to the playlist information. However, Yamane teaches a reproduction path, which is a reproduction sequence of an MPEG stream, is then determined to enable reproduction of content according to a user-selected scenario, (see col 1 lines 40-43).

Art Unit: 2627

Regarding claim 32, Oshima teaches the playback apparatus of Claim 31, but Oshima fails to teach that each interleave unit contains an identifier, and the playback control unit, in playing back the digital stream according to the playlist information, controls the read unit to read, from the optical disc, one of (a) an interleave unit containing an identifier of the playlist information and (b) an interleave unit containing an identifier of information that indicates a playback section of the playlist information. However, Yamane teaches the interleaved allocation flag IAF stores a value identifying whether the cell is in an interleaved block. If the cell is part of an interleaved block, the interleaved allocation flag IAF is set to 1; otherwise it is set to 0, (see col 20 lines 30-33).

Regarding claim 33, Oshima teaches the playback apparatus of Claim 31, but Oshima fails to teach the optical disc has recorded therein a dynamic scenario, the dynamic scenario defining a title by showing a playback procedure of at least one playback path shown by playlist information, the playback control unit controls the read unit to read, from the optical disc, one of (a) an interleave unit containing an identifier of the title corresponding to the dynamic scenario and (b) an interleave unit containing an identifier of a chapter included in the title corresponding to the dynamic scenario. However, Yamane teaches the interleaved allocation flag IAF stores a value identifying whether the cell is in an interleaved block. If the cell is part of an interleaved block, the interleaved allocation flag IAF is set to 1; otherwise it is set to 0, (see col 20 lines 30-33).

Art Unit: 2627

Regarding claim 34, Oshima teaches the playback apparatus of Claim 15, but Oshima fails to teach each interleave unit contains a locator that contains drive information and path information, the drive information indicating a drive to which the program is to be read, the path information indicating in which layer of a layer structure of the drive the program is to be disposed, and the playback apparatus disposes the program in the layer indicated by the path information. However, Yamane teaches the contiguous block regions and interleaved block regions are then written to disk in the track path Dr direction in the playback sequence, (see col 30 lines 58-60).

Regarding claim 36, Oshima teaches a playback method for an optical disc having recorded therein a digital stream but Oshima fails to teach the playback method comprising: a reading step of reading an a ith segment to be played back in an ith place, from among a plurality of segments constituting the digital stream; a playback step of playing back the read ith segment; and a processing step of performing synchronous processing using a program included in the read interleave unit, in synchronization with playback of the ith segment. However, Yamane teaches that as a result of significantly increased recording/playback capacity, high speed recording/playback, and performance improvements in the signal processing LSI in a DVD system, plural audio data streams and plural subpicture data streams (graphics data) can be recorded interleaved with a single video data stream as an MPEG system stream, thereby enabling the user to select the specific audio data and subpicture data to be reproduced during playback, (see col 21 lines 46-53).

Art Unit: 2627

Regarding claim 37, Oshima teaches a recording method for an optical disc, but Oshima fails to teach the recording method comprising: a step of creating application data; and a step of recording the created application data to the optical disc, wherein the application data contains a digital stream divided into n segments and an interleave unit, the interleave unit is recorded in front of an i th segment to be played back in an i th place, where each of i and n is an integer that satisfies $i < n$, and the interleave unit includes a program to be synchronized with playback of the i th segment. However, Yamane teaches video data from plural related paths is divided into specific segments, which are then multiplexed on an optical disc, (see col 1 lines 55-57). Yamane also teaches the multimedia source data St1, St3, and St5 are synchronized with the timing signals St9, St11, and St13 because St1, St3, and St5 are output after being delayed time T_d by the source stream buffer, col 7 lines 21-24).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2627

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENOK G. HEYI whose telephone number is (571)270-1816. The examiner can normally be reached on Monday to Friday 8:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph H. Feild/
Supervisory Patent Examiner, Art
Unit 2627

/Henok G Heyi/
Examiner, Art Unit 2627